Economics and Sociology
Occasional Paper #797

Wealth and Credit: A Descriptive Analysis of Farm Household Balance Sheets

by

Yongyuth Chalamwong

and

Richard L. Meyer

November 1980

Agricultural Finance Program
Department of Agricultural Economics and Rural Sociology
The Ohio State University
2120 Fyffe Road
Columbus, Ohio 43210

FOREWORD

This paper is one of a series produced by the Rural Off-Farm Employment Assessment Project at Kasetsart University. The project is funded by the U.S. Mission of the Agency for International Development in Thailand under Project No. 493-0306. The objective of the Project is to provide information to the Royal Thai Government, USAID, and other international donors, to be used to identify and develop appropriate policies and programs for the rural non-farm sector in Thailand.

The Working Paper Series is designed to share interim or preliminary results on different aspects of the Project work. Some papers also discuss methodologies to be used in future studies.

A list of Working Papers produced to date, along with a list of Research Papers of the Project, is included at the end of this report. Copies of papers in either series can be obtained from Dr. Tongroj Onchan, Director, Center for Applied Economics Research, Kasetsart University, Bangkok 9, Thailand.

Tongroj Onchan

Project Director

LIST OF TABALES

		Page
Table 1.	Average Amount of Assets Per Farm Household, February 1980.....	8
2.	Average Amount of Assets Per Farm Household by Province February, 1980.....	9
3.	Frequency Distribution of Farm Households by Amount of Assets February, 1980.....	11
4.	Average Amount of Farm, Nonfarm and Consumer Assets for Sample Households, February, 1980.....	12
5.	Number of Farm Households with Loans Outstanding by type of Loan and by Province, February, 1980.....	15
6.	Average Amount of Loans Outstanding Per Farm with Loans by Province, February, 1980.....	17
7.	Number and Average Amount of Loans Outstanding by Source by Province, February, 1980.....	18
8.	Purpose of Borrowing of Farm Household.	20
9.	Average Liquidity Ratios by Province, February, 1980.....	23
10.	Relationship Between Value of Assets and Debts of Indebted Households, February, 1980.....	25
11.	Distribution of Indebted Households by Current Ratio, February, 1980.....	27
12.	Distribution of Indebted Household by Intermediate Ratio, February, 1980....	28

I. INTRODUCTION

1.1 Background

Thailand has rapidly expanded the supply of formal credit for farm enterprises in recent years. The amount of money lent to farmers has rapidly increased and the number of commercial banks lending to farmers has risen. These changes are due to a number of policies that were put into effect beginning in 1975.[1/]

Although the credit supply has expanded, there has been little analysis of the impact on Thai agriculture generally, or on the individual farmers that have received the loans. It has been suggested that most loans have gone to large farmers with high quality assets for use as loan collateral (Bank of Thailand). But there have been no recent large scale surveys of farm households to document where the credit has been lent and which farmers have benefitted the most.

The issue of credit distribution is important because of its potential impact on farm production, income and accumulation of wealth. It is particularly important in Thailand because expansion in formal credit has been justified, in part, to prevent farmers from borrowing from informal sources, usually at high interest rates, and subsequently losing their land when they are unable to repay (Onchan). Thus it is

---

1/ These policies and their effect are summarized in Working Paper No. 9 and discussed in more detail by Meyer, Baker and Onchan.

important to determine the level of indebtedness of farmers and the source of their loans.

This paper presents information on the composition and distribution of assets and liabilities of a sample of 424 farm households. These households form the sample included in the Rural Off-Farm Employment Assessment Project. The data analyzed in this paper were collected in February, 1980, as part of the initial series of interviews designed to collect information on selected characteristics of the sample households at the beginning of the survey year. The values reported for assets and liabilities were given by the farmers. Extreme values were double checked but in all cases the values represent the farmers own estimates of the market value of assets and remaining unpaid balance of loans.

Data are continuing to be collected from these same households on a weekly and a monthly basis. Inconsistencies between the initial survey data and subsequent interviews have been resolved by reinterviewing. At the end of the survey year in February 1981, financial data will be collected and analyzed to permit comparison with the situation reported in the beginning interviews. Analysis of new loans and loan repayments made during the survey year will be conducted.

1.2 Conceptual Issues

This study employs a financial approach to the study of the financial conditions of the survey households. It represents the type of the analysis conducted by a leander trying to determine if an indebted household has the potential to repay debts. Most studies of credit in Thailand focus only an indebtedness. By analyzing both assets and liabilities, this study provides additional perspective on the magnitude of farm indebtedness.

This approach is admittedly a conservative one as it focuses attention on debt repayment through liquidation of assets, and as such represents the approach typically used by conservative lenders. A better measure of debt repayment for the purposes of evaluating whether or not a loan should be made or, if made, if it can be repaid is to analyze income earning potential. However, the income approach is not well suited for the cross-sectional financial data collected in the initial interviews.

This study utilizes ratio analysis of household assets and liabilities. The rational for ratio analysis was given by Van Horne (1974, p. 654):

> To evaluate the financial condition and performance of a firm the financial analyst needs certain yardsticks. The yardstick frequently used is a ratio, or index, relating two pieces of financial data to each other. Analysis and interpretation of various ratios should

> give an experienced and skilled analyst a better understanding of the financial condition and performance of the firm than he would obtain from analysis of the financial data alone.

This paper will report on financial ratios that existed as of February 1980. Future analysis will compare this situation with that of February 1981 to determine the types of changes and improvements that may have occured during the survey year.

Four types of financial ratios are frequently used in financial analysis: liquidity, debt, profitability and coverage. The first two can be calculated from balance sheet data such as collected in February, and the second two calculated from income statements which can constructed from data collected during the survey year.

Liquidity ratios are used to evaluate a firm's ability to meet short-term obligations (Van Horne, p. 657). The most well known method is the current ratio. It is defined as follows:

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Liabilities}}$$

This ratio means that for every unit of liability, there is a certain amount of current assets to repay debts. The higher the ratio, the greater is the ability of the farmer to repay liabilities. Usually the current ratio is defined to include only current liabilities. However, in this study all liabilities are

grouped together since it is difficult to clearly determine the original or remaining term of loans. Furthermore, many loans, particularly from noninstitutional sources, are reported as having no specific repayment period.

In some cases, loan repayment may require more funds than can be obtained by liquidating current assets. Therefore an intermediate ratio is constructed defined as:

$$\text{Intermediate ratio} = \frac{\text{Total current and intermediate assets}}{\text{Total liabilities}}$$

This ratio is the same as the current ratio except that it includes intermediate assets which are somewhat less liquid or convertable into cash.

The final ratio which is of interest to the lender is the net capital or total asset ratio defined as:

$$\text{Net capital ratio} = \frac{\text{Total assets}}{\text{Total liabilities}}$$

This ratio measures the long-term viability of the firm. It addresses the worst possible case: can the lender recover his claims if the firm fails? It reflects the overall solvency of the firm and evaluates if all claims could be paid if all assets were liquidated.

The issue of valuation of assets and liabilities is crucial in affecting the magnitude of the ratios calculated. Alternative methods of valuation have been proposed but most lenders resort to estimating current market value of assets. This was the criterion the farmers were instructed to use in responding to the questionnaire. However since some types of assets are rarely sold, it is logical to expect some difficulty in obtaining accurate estimates. In our data editing procedures, an attempt was made to identify and reinterview cases where assets appeared to be valued exceptionally high or low. Some errors obviously remain. Also there may be some errors in reports on liabilities, especially in the Chiang Mai region where farmers appear to be more hesitant in discussing credit use.

II. FARM HOUSEHOLD ASSETS

This section reports the amount and composition of assets as reported by the farm households. Assets can be defined in three broad categories, namely, current assets, intermediate assets, and fixed assets, depending on their liquidity or their ability to be converted to cash (Barry et. al,1979). Current assets consist of many categories such as financial assets including cash in hand, deposits in various institutions and credits to others. Other forms of current assets may be called working assets, which can be converted to cash only through selling such as value of livestock and crop inventories and gold

and jewelry. Intermediate assets consist of short-lived depreciable assets such as motor vehicles, farm tools, machines and equipment, etc. Fixed assets include land and buildings.

2.1 Total Assets Per Household

Table 1 reports the average amount of assets of the sample households. The average total amount was just over ฿120,000.[2/] Just over 60 percent of the total was in the form of fixed assets, while 17 percent were current and 22 percent intermediate. Clearly land and buildings represent the most valuable assets of the average household.

Table 2 reports the same information by province. The average value of current assets per household was the lowest in Roi-Et and the same was true for intermediate assets. This result was expected since the farms in Roi-Et are generally recognized as being some of the poorest in the country. On the other hand, the values for current and fixed assets were highest in Suphan Buri which is regarded as being one of the richest provinces. The low level of intermediate assets for Khon Kaen and Roi-Et reflect the limited investment farmers in these provinces make in vehicles, tools and equipment. As mechanization expands, it is expected that the value of these assets will rise relative to current and fixed assets.

2/ The exchange rate is approximately ฿20.00 = US$1.00.

Table 1. Average Amount of Assets per Farm Household

February, 1980

Type of Asset	Amount (Baht)	Percent
Current Assets	20,365	17
Intermediate Assets	26,998	22
Fixed Assets	74,633	61
TOTAL	121,996	100

Table 2. Average Amount of Assets per Farm Household by Province

February, 1980

Type of Asset	PROVINCE							
	Khon Kaen		Roi-Et		Chiang Mai		Suphan Bur	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	perce
Number of farms	141		75		164		44	
Current Assets	23,456	19.3	15,472	18.3	17,981	14.1	27,666	16.7
Intermediate Assets	5,667	4.7	2,855	3.4	57,040	44.9	22,168	13.
Fixed Assets	92,459	76.0	66,440	78.4	51,905	40.9	116,192	70.
TOTAL[a/]	121,582	100.0	84,767	100.1	126,896	99.9	166,026	100.

a/ Totals may not equal 100 due to rounding.

2.2 Frequency Distribution of Asset Ownership

Average values as reported alone mask the extent to which there is variance among farms. Table 3 reports the frequency distribution of farms by total amount of assets held by the household. The range of value of assets owned is great varying from less than ฿5,000 to over ฿320,000. Five percent of the sample reported less than ฿5,000 and almost 30 percent reported less than ฿30,000. But at the other extreme, 18 percent reported over ฿200,000. The sample clearly includes some of the poorest farmers in Thailand as well as many that are wealthier.

Another way to analyze the distribution of assets is to determine the number of households that reported ownership of certain assets. All households in all provinces reported some current and intermediate assets. In Khon Kaen, 96 percent reported fixed assets. The proportions were 91 percent for Roi-Et and Chiang Mai and 89 percent for Suphan Buri. This result is due to the fact that some households in the sample own no land.

2.3 Composition of Assets

Additional insight into the composition of assets was obtained by subdividing assets into categories of use emphasizing farm and nonfarm enterprises, (Table 4). Farm assets are those associated with farm enterprises, while nonfarm assets refer to those produced or

Table 3. Frequency Distribution of Farm Households by Amount of Total Assets. February, 1980

Amount (Baht)	No. of Farm Households	Percent	Comulative Percent
Less than 5,000	19	5	5
5001 - 15,000	49	11	16
15,001 - 30,000	54	13	29
30,001 - 50,000	57	13	42
50,001 - 80,000	57	13	55
80,001 -120,000	62	15	70
120,001 -200,000	50	12	82
200,001 -320,000	47	11	93
320,001 and above	29	7	100
TOTAL	424	100	-

Table 4. Average Amount of Farm, Nonfarm and Consumer Assets for Sample Households. February, 1980.

Type		Amount (Baht)		Percent
Farm Assets:				
Current Farm Assets		19,492		15.98
Intermediate Farm Assets		3,494		2.86
Fixed Farm Assets		74,357		60.95
Subtotal	97,343		79.79	
Non-Farm Assets:				
Current Non-Farm Assets		871		0.71
Intermediate Non-Farm Assets		17,198		14.10
Fixed Non-Farm Assets		277		0.23
Subtotal	18,346		15.04	
Consumer Durables	6,306		5.17	
TOTAL	121,996		100	

used in nonfarm enterprises in the hosehold. Some arbitrariness in classification obviously occurs. All household financial assets were classified as current farm assets. Consumer durables include major household items. Almost 80 percent of the assets were classified as farm. This was expected since many nonfarm enterprises use little capital. Buildings and facilities used in nonfarm enterprises are frequently simple and often are an indistinguishable part of the house so were classified as farm assets. Usually the inventory of nonfarm products is small compared to farm products. Consumer durables represent about five percent of assets on the average. This result suggests a rather low level of living for most households included in the sample.

III. FARM HOUSEHOLD LIABILITIES

Farm loans can be classified by type and source. Loans are made in cash and kind. Some farmers borrow just one type or the other, and some borrow a mixture of the two types. The most important institutional sources are the Bank for Agriculture and Agricultural Cooperatives (BAAC), cooperatives and commercial banks. The informal or noninstitutional sources include relatives, friends, landlords and money lenders. The analysis reported in this section covers the distribution of loans by type and source, and reported purpose of borrowing.

3.1 Distribution of Loans by Type of Loan

In February, 42 percent of the sample households (178) reported loans outstanding (Table 5). Thus over half of the households reported no loans of any type from any source. The proportion of the nonborrowers was higher than expected. Part of the explanation may be that some households borrowed during the 1979 production year, but had already repaid the loans out of receipts from rice or other sales during December, 1979 and January, 1980. The monthly data will be analyzed to determine how many households actually borrow during a production year. This information will complement the data on loans outstanding at one point in time.

As expected, the province with the lowest reported borrowing was Chiang Mai where only 24 percent of the farmers reported loans outstanding. Over fifty percent of the farmers reported loans outstanding in Khon Kaen and Suphan Buri, and slightly less than fifty percent in Roi Et.

The composition of credit is clearly in favor of cash loans, again with the exception of Chiang Mai. Overall, 30 percent of the farmers reported only cash loans, 8 percent reported only kind loans, and 3 percent reported a mixture of the two types of loans.

The total amount of debt outstanding as reported by the households was ฿893,342 for an average of ฿5,019 per farm. Of the total, 88 percent was held by farmers with only cash loans, 3 percent by

Table 5. Number of Farm Households with Loans Outstanding by Type of Loan and by Province. February, 1980.

	Number of Farms in Sample	Farms with Loans							
		Total		Cash only		Kind only		Mixed[b]	
		Number	Percent[a]	Number	Percent	Number	Percent	Number	Percent
Khon Kaen	141	78	55	58	41	15	11	5	4
Roi Et	75	35	47	32	43	1	1	2	3
Chiang Mai	164	39	24	20	12	13	9	6	4
Suphan Buri	44	26	57	22	48	3	7	1	2
TOTAL	424	178	42	132	30	32	8	14	3

[a] Due to rounding, the value in this column may not equal the total for the three values given for the three types of loans.

[b] Farms that have both cash and kind loans.

farmers with only kind loans and the remaining 9 percent by farmers with both types. The data in Table 6 show that the average amount of total loans outstanding was close to ฿ 6,000 for cash and mixed loan borrowers and ฿700 for borrowers of only kind loans. Suphan Buri households tend to have the largest amount of indebtedness per farm, Khon Kaen and Chiang Mai households are fairly similar, while Roi Et households have much lower average indebtedness.

3.2 Distribution of Loans by Source of Loan

The previous section reported on the distribution of loans where the emphasis was on the type of loan received by farmers. This section emphasizes the source of loan where the loan is the unit of analysis rather than the farm.

The 178 farmers with loans reported a total of 245 loans outstanding (Table 7) for an average of 1.3 loans per household. All four provinces were similar in this average. One hundred of these loans were from institutional sources compared to 135 from noninstitutional sources. However, the institutional sources are much larger so they represent 70 percent of the total value of loans outstanding. It is surprising that Suphan Buri, the province with the largest size loans, reported the lowest proportion of institutional loans (61). while Chiang Mai reported the highest (85).

Table 6. Average Amount of Loans Outstanding Per Farm With Loans by Province. February, 1980.

Province	Loan Type		
	Cash Only (฿)	Kind Only (฿)	Mixed (฿)
Khon Kaen	6,017	645	7,452
Roi Et	2,754	280	2,862
Chiang Mai	7,384	746	5,690
Suphan Buri	9,010	911	5,600
TOTAL	5,971	700	5,909

Table 7. Number and Average Amount of Loans Outstandings by Source by Province. February, 1980.

Province	Source of Loan: Institutional No.	Amount (฿)	Percent	Av. Amt. per Loan (฿)	Noninstitutional No.	Amount (฿)	Percent	Av.Amt. Per Loan (฿)	Total No.	Amount (฿)	Percent	Av.Amt. Per Loan (฿)
Khon Kaen	36	269,110	67	7,475	62	132,013	33	2,129	98	401,123	100	4,093
Roi-Et	16	67,245	71	4,203	37	26,890	29	727	53	94,135	100	1,776
Chiang Mai	31	163,090	85	5,261	18	28,430	15	1,579	49	191,520	100	3,909
Suphan Buri	17	125,596	61	7,388	18	80,164	39	4,453	35	206,564	100	5,902
TOTAL	100	625,041	70	6,250	135	267,497	30	1,981	235	893,342	100	3,801

The average size institutional loan was about three times as large as the average noninstitutional loan: ฿6,250 compared to just under ฿2,000. Institutional loans on average were larger in all regions. The largest insitutional loans were found in Khon Kaen where the average was just about ฿ 7,500 and the lowest were in Roi-Et. Roi Et noninstitutional loans were also the smallest, while the largest noninstitutional loans were found in Suphan Buri. The average size loans in Suphan Buri were large st because both the institutional and institutional loans were large.

3.3 Purpose for Borrowing

Households reporting loans were asked to specify the main reason for borrowing each loan. The purposes for borrowing were classified into three categories: farm and non-farm expenditures, capital asset expenditures, and consumption expenditures. The farm and non-farm expenditures included borrowing to pay hired labor. The capital asset expenditures included purchase of land, tractors, cars and trucks, equipment, and livestock. Consumption expenditures included living expenditures, housing, and other items.

The data in Table 8 show the initial amount borrowed and purpose of borrowing. Over 50 percent of the total amount borrowed supposedly was used to finance the purchase of assets, and about 25 percent each for production expenditures and consumption. This result suggests

Table 8. Purpose of Borrowing of Farm Household.

Purpose	Province								Total	
	Khon Kaen		Roi Et		Chiang Mai		Suphan Buri			
	Amount (฿)	%	Amount (฿)	%	Amount (฿)	%	Amount (฿)	%	Amount (฿)	%
1. Total Farm and Non-farm Expenditure	72,522	13	36,500	27	70,440	25	91,280	38	270,742	23
2. Total Asset Expenditure	349,375	72	77,500	58	93,040	33	97,600	41	617,515	51
- Land	45,000	8	52,000	39	70,000	25	18,000	8	185,000	15
- Tractor	10,000	10	-	-	4,000	1	71,100	30	85,100	7
- Cars and Trucks	151,200	28	10,000	2	16,480	6	3,500	1	181,180	15
- Equipment	12,000	2	-	-	-	-	-	-	12,000	1
- Livestock	131,175	24	15,500	12	2,560	1	5,000	2	154,235	13
3. Total Consumption Expenditure	132,706	23	20,005	15	117,640	42	47,834	20	318,185	26
- Living Expenses	51,306	9	10,700	8	28,540	10	4,534	2	95,080	8
- Expand House and Buildings	45,200	8	6,280	5	69,600	25	-	-	121,080	10
- Other	36,200	6	3,025	2	19,500	7	43,300	18	223,105	18
Total Original Amount Borrowed	554,553	100	134,005	100	281,120	100	236,714	100	1,206,392	100

that about three-fourths of all borrowing was for productive purposes. There is considerable variation among provinces. Over 70 of the amount borrowed was used for capital expenditure in Khon Kaen with 28 percent for purchase of cars and trucks and 24 percent for purchase of livestock. In Roi Et, 27 percent went for farm and nonfarm expenditures, and 39 percent for purchase of land. Chiang Mai reported the largest proportion for consumption, 42 percent, but 25 went for expanding houses and buildings. Suphan Buri households reported borrowing 35 percent for farm and non-farm expenditures, the largest proportion of all provinces. Farmers also reported 30 percent of their borrowings for tractors. This is consistent with the observation that Suphan Buri farmers are more mechanized than in other regions.

Two concerns must be kept in mind when analyzing these data on purpose for borrowing. Institutional lenders usually prefer to lend for productive rather than consumption purposes. Therefore farmers may apply for loans using production as the stated purpose when in fact they expect to use the loan for consumption. In responding to our questionnaire, they may have also hidden the real use made of the loans. Furthermore, through attempts to monitor the use of loan proceeds, lenders may have influenced farmer behavior. Without such controls, farm households may have allocated loan funds in a different pattern.

Second, we cannot conclude that the reported investments would not have been made without the loans. These loans may have substituted for savings that households would have used for these same investments in the absence of loans. However by borrowing, they were able to divert savings to other uses.

IV. Asset-Debt Relationships

4.1 Average Liquidity Ratios

The average liquidity ratios for the entire sample and for the households in each province are reported in Table 9. Overall, the indebted households have about ฿4 in current assets for each ฿ in liabilities, so on the average all liabilities could be repaid if necessary through liquidation of current assets only. Of course, the situation improves when analyzing intermediate and net capital ratios.

The regional differences noted in assets and liabilities are reflected in the liquidity ratios; Suphan Buri households have relatively greater debts compared to current assets so the current ratio is less than 2:5, while in the other regions it exceeds 4.

Table 9. Average Liquidity Ratios by Province, February 1980

Province	Ratio		
	Current	Intermediate	Net Capital
Khon Kaen	4.48	5.61	25.03
Roi Et	4.87	6,09	29.48
Chiang Mai	4.23	8.98	19.49
Suphan Buri	2.41	5,51	17.14
TOTAL	3,97	6.36	22,48

The same relationship holds with the other two ratio, but the difference between Suphan Buri and Chiang Mai narrows with the net capital ratios. Suphan Buri households reported relatively greater value of assets in land and buildings, and this expalins the tendency for convergence. Roi Et households tended to have higher ratios than the other provinces because of the lower amount of indebtedness. Therefore it can be concluded that the wealthier and more productive areas are relatively more indebted than the poorer ones. These data, however, mask potentially important differences among households, and these differences are analyzed in the next sections.

4.2 Distribution of Debt by Amount of Household Assets

The 178 households with liabilities were gouped in Table 10 according to the value of assets owned. The average debt per household was calculated for each group. Ten indebted households reported ฿5,000 or less in total assets, and on average they had ฿600 in debt. The 11 households with assets between ฿5,000 and ฿15,000 reported about twice that amount in average debt. As the value of assets increase, average debt also increases but at a slower rate and reaches a peak of ฿9,500 when assets exceed ฿320,000. Using the midpoint of each asset class, the average net capital ratio for the first class is 4.2 compared to 28.8 for the next to last class.

Table 10. Relationship Between Value of Assets and Debts of Indebted Households. February, 1980.

Value of Assets Owned per Household (Baht)	No. of Indebted Households	Total Amount of Debt (Baht)	Av. Debt per Household. (Baht)
1 - 5,000	10	5,997	600
5,001 - 15,000	11	13,950	1,268
15,001 - 30,000	24	46,344	1,931
30,001 - 50,000	23	70,845	3,080
50,001 -500,000	25	85,300	3,412
80,001 -120,000	27	137,345	5,087
120,001 -200,000	22	198,550	9,025
200,001 -320,000	25	239,911	9,227
320,001+	10	95,100	9,510
TOTAL	178	893,342	

Thus, as expected, the amount of debt is related to value of assets, but not in direct proportion. Wealthier households clearly have proportionately less debts.

4.3 Distribution of Households by Liquidity Ratio

Tables 11,12, and 13 report current, intermediate, and net capital ratios for the indebted households. Twenty-five households (14 percent of those with loans) could face repayment problems if they were required to repay all loans by liquidation of current assets as they have a current ratio less than one (Table 11). That is, they have less than one Baht of current assets for each Baht of liabilities. All other households have sufficient current assets to pay all debts. Since some loans are for more than one year, full repayment of debt is not required in the near future so the situation of these twenty-five households may be even less serious than it first appears. At the other extreme, 14 percent of the households had more than ฿25 in current assets for each Baht in debt.

The situation improves when intermediate assets are added to current assets (Table 12) and when all assets are considered (Table 13). Considering the intermediate ratio, only seven households would have repayment problems if forced to repay their debts by liquidating both current and intermediate assets. These households are the only ones that would face lose of land and buildings if forced to liquidate

Table 11. Distribution of Indebted Households by Current Ratio, February, 1980

Range of Current Ratio	Number of Households	Percent of Households
0 - 0.99	25	14
1 - 3.99	44	25
4 - 9.99	49	28
10 - 24.99	34	19
25 - 49.99	15	8
50 - 99.99	1	0
100 and above	10	6
TOTAL	178	100

Table 12. Distribution of Indebted Households by Intermediate Ratio. February, 1980

Range of Intermediate Ratio	Number of Households	Percent of Households
0 - 0.99	7	4
1 - 3.99	45	25
4 - 9.99	58	33
10 -24.99	31	17
25 -49.99	23	13
50 -99.99	5	3
100 and over	9	5
TOTAL	178	100

Table 13. Distribution of Households by Net Capital Ratio.

February, 1980

Range of Net Capital Ratio	Number of Households	Percent of Households
0 - 0.99	3	2
1 - 3.99	12	7
4 - 9.99	20	11
10 - 24.99	43	24
25 - 49.99	47	26
50 - 99.99	22	12
100 and above	31	17
TOTAL	178	99

all debts. Only three households appear to be insolvent if they liquidated all assets (Table 13).

Depending on how assets were valued, households with ฿1 to ฿ 4 of assets per ฿ 1 of liabilities could also have problems with repayment. However, even if assets were inflated by 100 percent, the number of households that are potentially insolvent probably doesn't exceed nine or ten out of a total of 178 borrowers and a total sample of 424.

V. Summary and Future Research

Caution is required in interpreting these results because they are preliminary and subject to change in subsequent analysis. It is not clear the extent to which the month in which the data were collected, February, influenced the level of liabilities reported. Also it is not yet clear if significant bias remains in the estimation of reported value of assets. Even though these issues must be recognized, it appears that the following pattern exists regarding the financial structure of farm households:

1. Fixed assets in the form of land and buildings represent an average of 60 to 70 percent of total assets.
2. The relative wealth of Suphan Buri and poverty of Roi Et province are clearly reflected as the average farm

household assets of the former are double those of the latter.

3. Five percent of the 424 households have total assets of less than ฿5,000, and almost 30 have ฿30,000 or less. All households have both current and intermediate assets, while 89 to 96 percent report fixed assets.
4. About five percent of the household assets are in the form of consumer durables. Most assets are used in or produced by farm rather than nonfarm enterprises.
5. Over half of the households reported no loans of any type from any source. Roughly one-fourth of Chiang Mai households have loans compared to about one-half in the other provinces. Thirty percent of the households report only cash loans, eight percent only kind loans and three percent a mixture of the two types. Households with only kind loans have much smaller loans than the other two groups.
6. Institutional sources provided 70 percent of the value of loans outstanding. The average size of the institutional loans was over ฿6,000 compared to ฿2,000 for noninstitutional loans. Households in Suphan Buri, the wealthiest province, surprisingly borrowed relatively more noninstitutional credit than farmers in other provinces.

7. Fifty percent of the value of loans were used for the acquisition of productive assets leading to a deepening of farm capital structure. About one-fourth of the loans went for farm and nonfarm expenditures, and another one-fourth for consumption.
8. One the average, borrowing households have ฿4 in current assets for ฿1 in total debt implying a relatively low level of debt. The lowest current ratio was found for households in Suphan Buri and the highest in Roi-Et.
9. The average debt per household increases as the value of assets increase, but at a less than proportionate rate.
10. Fourteen percent of the borrowing households would likely have problems if forced to repay all liabilities out of receipts from the sale of current assets. However, when intermediate and fixed assets are considered, only three households appear to be insolvent. If assets were overvalued, this number might increase but probably not to more than nine or ten.

Generally these results support the conclusion reached by Onchan: indebtness does not appear to be as serious as issue as normally believed. Over half the farm households have no loans and those that borrow do not appear to have inordinately large debts

relative to assets. Obviously a few households may face debt repayment problems, but additional analysis is required in order to more fully assess their situation. If, for example, some of their debt is long-term and is owed to family members, there may be little risk of actually losing their assets for slow or nonrepayment of loans.

This analysis has really only scratched the surface of what should be done to more fully understand financing of farm households. Some of the questions we feel should be addressed are listed below:

1. What explains the current pattern of borrowing? Do the wealthy borrow more because they are wealthy, or do they become wealthy because they borrow?
2. Do borrowers and nonborrowers differ in systematic ways so that insights canbe gained into the demand or supply factors that explain the pattern of borrowing?
3. Is noninstitutional credit burdensome as normally believed or beneficial for modernizing agriculture?
4. Do terms (terest rate, repayment period, etc.) vary in systematic ways among farm households.

5. What impediments exist to expanding formal credit?
6. Does credit appear to be an important constraint on productivity and income of households?
7. How do households manage and allocate their various sources of cash (income from farm and nonfarm enterprises, off-farm work, savings, borrowing) among competing uses?
8. What is the relationship between these results and financial activities during the production year? What changes will occur in debts and assets by the end of the year?

We expect to continue analysis on some of these issues during the next several months so financial problems and possibilities of households will be placed in clearer perspective.

REFERENCES

Bank of Thailand, Annual Economic Report, 1978, Bangkok, 1979

Barry , Peter J., John A. Hopkin, and C.B. Baker, Financial Management in Agriculture, The Interstate Printers and Publishers, Inc., 1979

Meyer, Richard L., Chester B. Baker, and Tongroj Onchan, "Agricultural Credit in Thailand", Research Report No. 6, Center for Applied Economics Research, Kasetsart University, Bangkok, May, 1979.

Onchan, Tongroj, "The Burden of Debt of Thai Farmers : An Overview Discussion Paper No. 2, Center for Applied Economics Research, Kasetsart University, October, 1979.

Van Horne, J.C., Financial Management and Policy, Prentice - Hall Inc., (New York), 1974.

Publications of Rural Off-Farm Employment Assessment Project

RESEARCH PAPERS

No.1 Tongroj Onchan, Pradit Charsombut, Richard L. Meyer and Donald C. Mead, "Description of the Rural Off-Farm Employment Assessment Project in Thailand", October, 1979.

No. 2 Donald C. Mead and Pradit Charsombut, "Rural Off-Farm Employment in Thailand: Phase I Survey Results", June, 1980.

WORKING PAPERS

No. 1 Merle Menegay and Vinich Veerayangkul, "Kenaf Processing in North-Eastern Thailand", August, 1980.

No. 2. Tongroj Onchan, "The Textile Products Industry in Rural Thailand", August, 1980.

No. 3 Pradit Charsombut, "The Silk Weaving Industry in North-Eastern Thailand", August, 1980.

No. 4 Pradit Charsombut, "Mat Making and Fish Net Making in North-Eastern Thailand", September, 1980.

No. 5 Merle Menegay and Vinich Veerayangkul, "Agricultural Hand Tool, Animal Implement, and Machinery Manufacturers in Towns within Chiang Mai, Khon Kaen and Suphanburi Provinces", September, 1980.

No. 6 Saroj Aungsumalin, "The Brick Industry in Chiang Mai: A preliminary Survey", September, 1980.

No. 7 Somsak Priebprom, Rapeepun Jaisaard, Richard L. Meyer, "Farm Household Modelling: Objectives and Methodology" November, 1980.

No. 8 Merle Menegay, Suwapote Lekawathana, Vinich Veerayangkul, "The Fruit and Vegetable Processing Industry in Selected Areas of Chiang Mai, Khon Kaen, and Roi Et Provinces", November, 1980.

No. 9 Richard L. Meyer, "Formal Credit Supplies for Rural Enterprises", November, 1980.

No. 10 Donald C. Mead and Vinai Artkongharn, "Profitability and Efficiency: Some Preliminary Survey Results" November,1980.

No. 11 Jeerakiate Apibunyopas, "An Economic Analysis of Employment in Kenaf, Cassava and Sugar Cane Production and Processing in Northeast Thailand", November, 1980.

No. 12 Yongyuth Chalamwong and Richard L. Meyer, "Wealth and Credit: "A Descriptive Analysis of FArm Households" November, 1980.